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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: [year=2009; month=7; day=9; hr=10; min=15; sec=9; ms=889;]

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Application No: 09555534 Version No: 5.0

Input Set:

Output Set:

Started: 2009-06-19 15:29:51.102
Finished: 2009-06-19 15:30:06.691
Elapsed: 0 hr(s) 0 min(s) 15 sec(s) 589 ms
Total Warnings: 34
Total Errors: 4
No. of SeqIDs Defined: 36
Actual SeqID Count: 36

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)

Input Set:

Output Set:

Started: 2009-06-19 15:29:51.102

Finished: 2009-06-19 15:30:06.691

Elapsed: 0 hr(s) 0 min(s) 15 sec(s) 589 ms

Total Warnings: 34

Total Errors: 4

No. of SeqIDs Defined: 36

Actual SeqID Count: 36

Error code	Error Description
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W 213	Artificial or Unknown found in <213> in SEQ ID (20)
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)
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SEQUENCE LISTING

<110> Ensoli, Barbara

<120> HIV-1 TAT, OR DERIVATIVES THEREOF FOR
PROPHYLACTIC AND THERAPEUTIC VACCINATION

<130> 11340-003-999

<140> 09555534

<141> 2000-05-31

<150> PCT/EP98/07721

<151> 1998-11-30

<150> RM97A000743

<151> 1997-12-01

<160> 36

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 261

<212> DNA

<213> Human immunodeficiency virus

<220>

<221> CDS

<222> (1)...(261)

<223> Wild-type HIV-1 Tat

<400> 1

atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt	48
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser	
1 5 10 15	

cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt	96
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe	
20 25 30	

cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tat ggc	144
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly	
35 40 45	

agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act	192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr	
50 55 60	

cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc cga ggg gac	240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp	
65 70 75 80	

ccg aca ggc ccg aag gaa tag	261
Pro Thr Gly Pro Lys Glu *	

<210> 2
 <211> 86
 <212> PRT
 <213> Human immunodeficiency virus

<220>
 <223> Wild-type HIV-1 Tat

<400> 2
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80
 Pro Thr Gly Pro Lys Glu
 85

<210> 3
 <211> 261
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <222> (1)...(261)
 <223> HIV-1 Tat having an amino acid
 substitution at position 22 (changed from Cys to Gly)

<400> 3
 atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 cag cct aaa act gct ggt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
 Gln Pro Lys Thr Ala Gly Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act 192
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc cga ggg gac 240
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp

65	70	75	80	
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ccg aca ggc ccg aag gaa tag 261

Pro Thr Gly Pro Lys Glu *

85

<210> 4

<211> 86

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 Tat having an amino acid substitution
at position 22 (changed from Cys to Gly)

<400> 4

Met	Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser
1				5				10						15	
Gln	Pro	Lys	Thr	Ala	Gly	Thr	Asn	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Phe
			20				25						30		
His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Lys	Ala	Leu	Gly	Ile	Ser	Tyr	Gly
		35				40						45			
Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr
	50				55				60						
His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser	Gln	Ser	Arg	Gly	Asp
65				70				75						80	
Pro	Thr	Gly	Pro	Lys	Glu										
				85											

<210> 5

<211> 261

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)...(261)

<223> HIV-1 Tat having an amino acid
substitution at position 41 (changed from Lys to Thr)

<400> 5

atg	gag	cca	gta	gat	cct	aga	cta	gag	ccc	tgg	aag	cat	cca	gga	agt	48
Met	Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser	
1				5				10						15		
cag	cct	aaa	act	gct	tgt	acc	aat	tgc	tat	tgt	aaa	aag	tgt	tgc	ttt	96
Gln	Pro	Lys	Thr	Ala	Cys	Thr	Asn	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Phe	
			20				25						30			
cat	tgc	caa	gtt	tgt	ttc	ata	aca	aca	gcc	tta	ggc	atc	tcc	tat	ggc	144
His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Thr	Ala	Leu	Gly	Ile	Ser	Tyr	Gly	
			35				40					45				
agg	aag	aag	cgg	aga	cag	cga	cga	aga	cct	cct	caa	ggc	agt	cag	act	192
Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr	

50

55

60

cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc cga ggg gac 240
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80

ccg aca ggc ccg aag gaa tag 261
 Pro Thr Gly Pro Lys Glu *
 85

<210> 6

<211> 86

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 Tat having an amino acid substitution at
 position 41 (changed from Lys to Thr)

<400> 6

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 His Cys Gln Val Cys Phe Ile Thr Thr Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80
 Pro Thr Gly Pro Lys Glu
 85

<210> 7

<211> 252

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)...(252)

<223> HIV-1 Tat having a three-amino acid deletion at
 positions 78-80 (Arginine-Glycine-Aspartic acid (RGD))

<400> 7

atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly

35

40

45

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agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act 192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
  50          55          60

cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc ccg aca ggc 240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly
  65          70          75          80

ccg aag gaa tag 252
Pro Lys Glu *
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<210> 8

<211> 83

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 Tat having a three-amino acid deletion at positions 78-80
(Arginine-Glycine-Aspartic acid (RGD))

<400> 8

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Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
  1          5          10          15
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
          20          25          30
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
          35          40          45
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
          50          55          60
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly
          65          70          75          80
Pro Lys Glu
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<210> 9

<211> 252

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)...(252)

<223> HIV-1 Tat having a three-amino acid deletion at
positions 78-80 (Arginine-Glycine-Aspartic acid (RGD)) and
having an amino acid substitution at position 41 (from Lys to Thr)

<400> 9

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atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
  1          5          10          15

cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
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Gln	Pro	Lys	Thr	Ala	Cys	Thr	Asn	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Phe	
20				25				30								
cat	tgc	caa	gtt	tgt	ttc	ata	aca	aca	gcc	tta	ggc	atc	tcc	tat	ggc	144
His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Thr	Ala	Leu	Gly	Ile	Ser	Tyr	Gly	
35				40				45								
agg	aag	aag	cgg	aga	cag	cga	cga	aga	cct	cct	caa	ggc	agt	cag	act	192
Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr	
50				55				60								
cat	caa	gtt	tct	cta	tca	aag	cag	ccc	acc	tcc	caa	tcc	ccg	aca	ggc	240
His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser	Gln	Ser	Pro	Thr	Gly	
65				70				75				80				
ccg	aag	gaa	tag													252
Pro	Lys	Glu	*													

Gln Pro Lys Thr
20

<210> 12
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> HIV-1 Tat peptide

<400> 12
Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His Cys Gln Val
1 5 10 15
Cys Phe Ile Thr
20

<210> 13
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> HIV-1 Tat peptide

<400> 13
Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys
1 5 10 15

<210> 14
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> HIV-1 Tat peptide

<400> 14
Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln
1 5 10 15

<210> 15
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> HIV-1 Tat peptide

<400> 15
Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln
1 5 10 15

<210> 16
 <211> 16
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> HIV-1 Tat peptide

 <400> 16
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 1 5 10 15

<210> 17
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HIV-1 Tat peptide

<400> 17
 Pro Thr Ser Gln Ser Arg Gly Asp Pro Thr Gly Pro Lys Glu
 1 5 10

<210> 18
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Forward primer Rev

<400> 18
 atggcaggaa gaagc 15

<210> 19
 <211> 15
 <212> DNA
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<220>
 <223> Reverse primer Rev

<400> 19
 ctattcttta gttcc 15

<210> 20
 <211> 15
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<220>
 <223> Forward primer Nef

<400> 20	
atgggtggca agtgg	15
<210> 21	
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<223> Reverse primer Nef	
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tcagcagtcc ttgta	15
<210> 22	
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atgggtgcga gagcg	15
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<211> 15	
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<223> Reverse primer Gag	
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ttaggaagca ttcag	15

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 <220>
 <223> Forward primer IL-15

 <400> 26
 atgagaattt cgaaa 15

 <210> 27
 <211> 15
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Reverse primer IL-15

 <400> 27
 tcaagaagtg ttgat 15

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 <223> Forward primer Tat

 <400> 28
 atggagccag tagat 15

 <210> 29
 <211> 15
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 <220>
 <223> Reverse primer Tat

 <400> 29
 ctattccttc gggcc 15

 <210> 30
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 <223> Forward primer Tat/Rev

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 ggcccgaagg aaatggcagg aagaagc 27

 <210> 31

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 ggcccgaagg aaatgggtgg caagtgg 27

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 <223> Forward primer Tat/Gag

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 ggccctgaag gaaatgggtg cgagagcg 28

 <210> 33
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Forward primer Tat/IL-12

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 ggcccgaagg aaatgtggcc ccctggg 27

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 <220>
 <223> Forward primer Tat/IL-15

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 ggcccgaagg aaatgagaat ttcgaaa 27

 <210> 35
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 <223> Primer SG1096Ngag

 <400> 35
 ttaggctacg acccggcgga aaga 24

 <210> 36
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<213> Artificial Sequence

<220>

<223> Primer SG1592CgagD

<400> 36

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24